

IN THE CLAIMS:

All of the pending claims 11-14, 16-18, 20, 21, and 23-25 are set forth below. The status of each claim is indicated with one of (cancelled), (previously presented), or (currently amended). Please AMEND claims 24 and 25 in accordance with the following:

1-10. (cancelled)

11. (previously presented) A cable-side optical communication unit connectable with an apparatus-side optical communication unit provided in an apparatus for executing communication with a communicating partner by using optical signals, the cable-side optical communication unit comprising:

a light emitting section to transmit an optical signal to said apparatus;

a light receiving section to receive an optical signal from said apparatus;

an optical module to house said light emitting section, said light receiving section, and an integrated circuit to execute communications with the apparatus-side optical communication unit, wherein the light emitting section is connected to one of a pair of optical fiber cables to transmit the optical signal from the optical fiber cable to the apparatus, and the light receiving section is connected to the other of the pair of optical fiber cables to transmit the optical signal from said apparatus to the optical fiber cable;

a first converging lens attached to said optical module, to converge the optical signal transmitted by said light emitting section and to transmit the converged optical signal to said apparatus;

a second converging lens attached to said optical module, to converge the optical signal transmitted by said apparatus and to transmit the converged optical signal to said light receiving section;

a frame formed in a box form to contain said optical module, said first converging lens and said second converging lens;

a contact surface with said apparatus-side communication unit provided on said frame;

an optical filter provided on said contact surface to pass an infrared ray therethrough;

and

a shielding section to optically shield light between said first converging lens and said second converging lens, and to enable simultaneous bi-directional optical communication, wherein

the first converging lens and the second converging lens are provided within said frame

so as to face said optical filter, and said shielding section is provided within said frame.

12. (previously presented) An optical communication unit according to claim 11, further comprising:

a connecting section with an optical cable unit, wherein said optical communication unit transmits and receives optical signals to and from said apparatus via said optical cable unit.

13. (previously presented) An optical communication unit according to claim 11, further comprising:

an optical filter to cut off a visual light on a light path of the optical signal from said apparatus to said light receiving section, and the optical signal from said light emitting section to said apparatus.

14. (previously presented) An optical communication unit provided between two apparatuses that perform optical communication with each other, the optical communication unit transmitting and receiving optical signals to and from said apparatuses, the optical communication unit comprising:

a connector being connectable to any one of said apparatuses;

a signal transmitting/receiving section including a light receiving section to transmit an optical signal received from one of said apparatuses, and a light emitting section to transmit an optical signal transmitted from the other of said apparatuses to said one of said apparatuses;

an optical module to house said signal transmitting/receiving section such that the light emitting section is connected to one of a pair of optical fiber cables to receive the optical signal from the other of said apparatuses, and that the light receiving section is connected to the other of the pair of optical fiber cables to transmit the optical signal from said one of said apparatuses to the optical fiber cable, and the optical module including a first converging lens attached thereto to converge the optical signal transmitted by said light emitting section, a second converging lens attached thereto to converge the optical signal received at said light receiving section, and including at least one window to pass the optical signal from said one of said apparatuses to said light receiving section, and to pass the optical signal from said light emitting section to said one of said apparatuses;

a frame formed in a box form to contain said optical module, said first converging lens and said second converging lens and provided with the connector;

a contact surface provided on said frame; and

an optical filter provided in the window, to cut off a visual light and to pass an infrared ray therethrough, wherein a shielding section is provided to optically shield light between said first converging lens and said second converging lens, and to realize full duplex communication, said at least one window and said connector are formed on said contact surface, the first converging lens and the second converging lens are provided within said frame so as to face said optical filter, and said shielding section is provided within said frame.

15. (cancelled)

16. (previously presented) An optical communication unit according to claim 14, wherein the shielding section is provided to prevent incidence of an optical signal from said light emitting section to said light receiving section.

17. (previously presented) An optical communication unit according to claim 14, wherein the first converging lens converges an optical signal from said one of said apparatuses and transmits the optical signal to at least one of the pair of optical cables; and

the second converging lens converges an optical signal transmitted through at least one of the pair of optical cables and transmits the optical signal to said one of said apparatuses.

18. (previously presented) An optical communication unit according to claim 14, wherein said light receiving section has a first modulating/demodulating section to receive an optical signal transmitted from said one of said apparatuses and convert the optical signal to an electric signal, and also to demodulate said electric signal to an optical signal and transmit the optical signal to at least one of the pair of optical cables; and

said light emitting section has a second modulating/demodulating section to receive the optical signal transferred through at least one of the pair of optical cables and to convert the optical signal to an electric signal, and also to demodulate said electric signal to an optical signal and transmit the optical signal to said one of said apparatuses.

19. (cancelled)

20. (previously presented) An optical communication unit according to claim 14, wherein said light receiving section has a circuit that changes an available area thereof according to a communication speed of an optical signal.

21. (previously presented) An optical communication unit according to claim 14, wherein said light receiving section has a circuit that changes an available area thereof according to a transmission distance of an optical signal.

22. (cancelled)

23. (previously presented) An optical communication unit according to claim 14, wherein said light receiving section and said light emitting section are realized with one lens.

24. (currently amended) A cable-side optical communication unit connectable with an apparatus-side optical communication unit provided in an apparatus and having a light transceiver section to transmit/receive an optical signal to and from the apparatus for executing communication with a communication device, the cable-side optical communication unit comprising:

an optical module to house the light transceiver section and an integrated circuit to execute communications with the apparatus-side optical communication unit, and to execute communications with the other cable-side optical communication unit connected at other end of a pair of optical fiber cables, wherein the light transceiver section is connected to one of the pair of optical fiber cables to transmit the optical signal from the optical fiber cable to the apparatus, and the light transceiver section is connected to the other of the pair of optical fiber cables to transmit the optical signal from said apparatus to the optical fiber cable, and the integrated circuit executes bi-directional communications with the apparatus-side optical communication unit and the other cable-side optical communication unit;

~~an optical filter provided on a contact surface with the apparatus-side communication unit of the optical module, to pass an infrared ray therethrough;~~

a first converging lens attached to the optical module, to converge the optical signal transmitted by the light transceiver section and to transmit the converged optical signal to the apparatus;

a second converging lens attached to the optical module, to converge the optical signal transmitted by the apparatus and to transmit the converged optical signal to the light transceiver section;

a frame formed in a box form to contain said optical module, said first converging lens and said second converging lens;

a contact surface with said apparatus-side optical communication unit provided on said frame;

an optical filter provided on the contact surface to pass an infrared ray therethrough;
and

a shielding section to optically shield light between said first converging lens and said second converging lens, and to enable simultaneous bi-directional optical communication, wherein

the first converging lens and the second converging lens are provided within said frame so as to face said optical filter, and said shielding section is provided within said frame.

25. (currently amended) An optical communication unit provided between two apparatuses that perform optical communication with each other, the optical communication unit transmitting and receiving optical signals to and from said apparatuses, the optical communication unit comprising:

a signal transmitting/receiving section including a light receiving section to transmit an optical signal received from one of said apparatuses, and a light emitting section to transmit an optical signal transmitted from the other of said apparatuses to said one of said apparatuses;

a converging lens coupled to an optical cable and arranged in light paths of the optical signal from said one of said apparatuses to said light receiving section, and the optical signal from said light emitting section to said one of said apparatuses;

a frame formed in a box form to contain said signal transmitting/receiving section and said converging lens;

a contact surface with said one of said apparatuses provided on said frame; and

an optical filter provided on said contact surface to pass an infrared ray therethrough, wherein

said light receiving section and said light emitting section are integrated with each other, and said converging lens is provided within said frame so as to face said optical filter.